

COLONY OF MAURITIUS.



ANNUAL REPORT

ON THE

DEPARTMENT OF AGRICULTURE

FOR

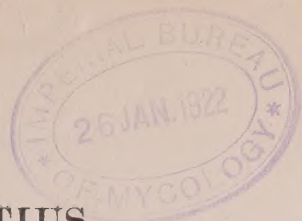
1915.

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MAURITIUS.

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THE GOVERNMENT PRESS.

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1916.







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No. 1204.

THE HONORABLE

THE COLONIAL SECRETARY,

I have the honour to submit herewith the Annual Report for the year 1915 on Agriculture in Mauritius and on the working of the Department of Agriculture.

**SECTION I.**

AGRICULTURE IN MAURITIUS, 1915.

2. The year 1915 did not at the outset offer any prospects for a prosperous year for Agriculture. At the beginning of the year the Colony was suffering from a severe drought and this did not break until the end of February. Owing to the war in Europe, the cost of all materials required for sugar factories had greatly increased, labour cost had increased, and the cost of living gone up. Fibre factories were only working spasmodically owing to difficulties in obtaining freight, and the vanilla export market was closed.

3. The high prices realised for the sugar-crop of 1914, however, brought large sums of money into the Colony, and this had resulted in the attention of all being centred around sugar. Large purchases of machinery for sugar factories were made and speculation in sugar-cane estates took place. Considerable purchases of lands were made by small planters. The sugar industry during the year made some progress. The prospect of high prices for sugar for the next few years has directed the thoughts of all to sugar, with the consequence that but very little progress is to be reported in subsidiary industries. This is greatly to be regretted, although it is not to be wondered at. The present time, when there is plenty of cheap money available in the Colony, should be seized upon for the exploitation of other industries and for the serious trial of other crops. The fibre industry is capable of extension and improvement. It is in need of capital. Maize could be grown on a larger scale for home consumption, coffee cultivation is worthy of attention, while increased quantities of cacao could be produced in well sheltered valleys in some localities. The improvement of stock and the raising of meat for local consumption also offers a very good opportunity for the use of capital. The investment of money in industries other than sugar deserves at the present moment serious consideration. The sugar industry does not require all the money now available, and the establishment and extension of other industries would improve the economic stability of the Colony.

*Climate.*

4. From July 1914, the rainfall throughout the whole Island was short, and at the beginning of 1915 it was obvious that the Colony was going through a period of severe drought. No general end-of-year rains fell and it was not until the end of February that these conditions of drought were brought to an end by a cyclonic storm passing in close proximity to the Island. The distribution of rainfall throughout the year was irregular.

5. The climatic conditions as they affect agriculture are shown in the following table :—

<i>Months.</i>	<i>Temperature.</i>	<i>Rainfall.</i>	<i>Amount of Sunshine.</i>
November 1914	High, except in upper districts	Short .. ...	Above normal.
December „	High.	Short ... ..	„ „
January 1915	High at the end of month.	Very short ... ..	„ „
February „	High.	Heavy at end of month.	„ „
March „	Above normal ...	Above normal, except in the North.	„ „
April „	„ „ ...	Very short ... ..	„ „
May „	„ „ ...	Normal, except in Flacq.	Normal.
June „	Fell below normal towards end of the month	Much below normal, except in Moka.	Below normal.
July „	Normal ... ..	Much below normal, except in the North.	Normal.
August „	Low ... ..	Below normal ...	„
September „	Normal ... ..	Above normal, except in the North.	„
October „	„ ... ..	75 o/o below normal.	Above normal.
November „	„ ... ..	50 o/o „	„ „
December „	Above normal ...	30 o/o below normal, except in Savanne and Grand Port.	„ „

6. The growth of sugar-cane was seriously affected by the unsatisfactory climatic conditions of the year. The rains were below normal and subsequent falls were generally heavy and irregularly distributed. The Northern districts and the lower part of Plaines Wilhems suffered most severely, and with the exception of small areas in Flacq and Savanne, all crops fell below normal.

7. The dryness of the season was unfavourable for maize, pistache, and other crops. The low temperatures of June and July resulted in heavy dews and consequently leaf diseases of potatoes and tomatoes were prevalent. The winter season from May to August was favourable to the growth of vegetable crops in those places where water was available.

### *Sugar-Cane.*

8. At the end of 1914, the total area under sugar-cane was 159,172 arpents. Of this 92,588 arpents were cultivated by estates and 66,584 by planters. The total area of lands cultivated by Indians was 59,132 arpents or 37.15 o/o of the total area under this product. The area of land cultivated by Indians is steadily increasing, and the recent morcellement of estates has encouraged land speculation by this section of the community. In the Plaines Wilhems district 58 o/o of the total area under cane is now cultivated by Indians and in Pamplemousses nearly 48 o/o. The high prices for sugar have resulted in further planting of waste and abandoned lands with sugar-cane and it is estimated (the final figures not being yet available) that an additional 5,000 arpents were brought under cultivation during the year 1915.

9. Returns were received from 110 estates during the year respecting the areas occupied by the several varieties of canes under cultivation. These figures have been tabulated and an article prepared for publication by the Statistician. The White Tanna variety still remains the general favourite and occupied 47 o/o of the total area from which figures were obtained. The Striped Tanna occupied 8.76 o/o,



while the local Perromat seedling 55 occupied 14.46 o/o and No. 131 a total of 5.23 o/o. The Demerara seedling 74 now occupies 5.88 o/o and D. 130 an area equivalent to 5.27 o/o. The distribution of the varieties throughout the districts is an interesting study and the figures obtained are of considerable interest. The White Tanna variety occupies 75 o/o of the area cultivated in the Moka District and 56 o/o of that of Grand Port, while in the Pamplémousses district it only occupies 12.7 o/o. M. P. 55 covers 24.3 o/o of the plantations of Plaines Wilhems district and 20 o/o of those of Flacq. M. P. 131 occupies 10 o/o of the recorded plantations in Pamplémousses, and 7.7 o/o of those in Flacq. D. 74 represents 12.77 o/o of plantations in Rivière du Rempart and 11.26 o/o of those in Pamplémousses, while D. 130 is grown on 18.66 o/o of the area of Pamplémousses and 17.7 o/o in Rivière du Rempart. Previous figures obtained in 1912 show that the White Tanna variety has increased from 36.6 to 47 o/o. They also indicate marked increase in seedlings M. P. 55 and D. 74, with marked falls in the areas occupied by the Fotiogo, Iscambine varieties and seedlings M. P. 80, M. P. 87, M. P. 89 and M. P. 133.

10. The Tanna varieties during the year showed stem deterioration, and even some of the newer Tanna sports suffered. Estates situated in Moka, which are almost wholly planted with White Tanna are making increased plantations with varieties other than the Tannas; M. P. 131 is being given an extended trial and further plantations are being made with D. 74.

The purple striped sport of White Tanna which gave most promising results as virgins on one estate in the lower part of Moka in 1914 did not come up to expectations in ratoons but it is thought that this may have been largely, if not entirely, due to the conditions of drought which prevailed in this locality throughout the year. D. 74 gave satisfactory results, and it is being extended in all districts. Of the newer seedlings the most striking results were obtained from small lots of B. 3390 in the Northern districts. This cane proved itself to be a good drought-resister and is worthy of further extension in the Northern part of the Island.

Sugar-cane in Mauritius is more liable to produce 'sports' than in any other country in which I have had experience. The greater part of the White Tanna now cultivated in the Colony arose from sports of the Striped Tanna collected upon various estates in or about the year 1893. The collection of sports in the fields of canes is carried out on several estates and a large variety are under trial. Upon one estate during the year 50 sports were collected from fields of Striped Tanna and planted in a separate nursery.

11. Cane seeds during the year were not particularly fertile except in one locality in Flacq. Sowing cane seeds for the production of seedlings was undertaken by several estates during the year and upon one estate large numbers have been raised and planted out. Nurseries for testing varieties have been generally extended, but in some instances they have not been established on really first rate land. The planting on lowland estates of tops from canes grown on the higher lands is also under experiment.

The question of introducing further varieties of canes from other countries in large quantities was considered by the Chamber of Agriculture during the year, and the Department of Agriculture furnished to that body full particulars of its recent introductions of cane varieties together with information concerning those countries from which could be obtained new varieties of canes most likely to suit Mauritian conditions. As transport facilities were difficult, it was decided not to proceed with the proposal at present.

12. During 1913, the machinery in factories underwent slight improvements. Four economisers were added to the furnace department and three bagasse driers (sècheres) dispensed with. Mill rollers were increased by 1, juice heaters by 11, settling tanks by 164, filter-press plates by 298, vacuum pans by 7, crystallisers by 80 and Weston centrifugals by 5.

For the 1915 crop only 57 factories worked. One factory was dismantled during the year on purchase by and amalgamation with the neighbouring estate. Another factory decided not to work, as the estate's crop suffered most severely from drought. Very great alterations were made in machinery for the 1915 crop. Money was plentiful after the high prices realised in 1914, and estate owners wisely determined



to improve machinery. The complete figures for the changes made in the factories in 1915 are not yet available, but the following remarks indicate the principal ones carried out. The furnace departments were considerably changed as a determined effort is being made by all to reduce fuel consumption. In some cases improved results were immediately obtained, while in others further changes were indicated before the results were likely to show improvement. Some new mills were imported and several factories adopted the Messchaert juice grooves. Opinion is still divided in the Colony as to the practical advantage of these grooves, but it is expected that some further extension of the system may be looked for. Evaporating departments were improved and some additional large pans were installed. Some of the 'effets' were changed during the year, but the results were not in all cases satisfactory. In the Northern districts, where the shortage of water is frequently felt, several central condensers were installed during the year and were of great value to these factories during the extremely dry period which prevailed for the latter half of the crop season.

Crystallisers-in-motion were again increased in number and a large number of Weston type centrifugals installed. Several factories made great changes in their sugar-bagging departments, in the effort to save labour.

13. Another mark of progress in the industry must be alluded to. The successful installation of a mechanical unloader on an estate in Savanne has convinced factory owners that mechanical unloading of canes at the factories is possible in the Colony. The Hoist system was installed, and it has successfully demonstrated that it can handle canes even when brought to the factory by the following varied means of transport :—

- i. By railway waggons in quantities varying from 10-20 tons of canes per waggon.
- ii. By traction engines in large trucks.
- iii. By estate tramway trucks carrying from 2-4 tons of canes each.
- iv. By estate and small planters carts carrying from  $\frac{3}{4}$ -1 ton of canes.

By the installation of the mechanical unloading, costs of handling canes at the chain were reduced from 12-13 cents to slightly over  $4\frac{1}{2}$  cents per ton of canes. There was likewise more rapid liberation of waggons, trucks and carts at the factory and a large force of labourers freed for field work. As the result of this successful installation, several large factories, especially those receiving quantities of canes from small planters and from estates without factories, have placed orders for further installations of mechanical unloaders for the coming crop.

14. Enquiries were made by the Department of Agriculture in consultation with the Dock Companies as to the possibility of handling the sugar in the docks by mechanical means. There are numerous difficulties to be overcome, but there is every possibility that a mechanical unloading and loading system may be adopted. The chief difficulties the docks have to contend with are the small size of the stores, and the large number of marks of sugar produced by the factories.

15. Improvements in economy of fuel consumption of factories continue, as shown by the following figures collected in the control sheets of the Society of Chemists :—

*Average Consumption, calculated as coal (kilos per ton of cane crushed).*

			<i>Bagasse.</i>	<i>Additional.</i>	
1912	...	...	78.6	19.2	(Average of 18 factories).
1913	...	...	60.1	17.0	( " " )
1914	...	...	59.5	14.4	( " 26 " )



16. The average extraction of factories contributing figures to the control sheets of the Society of Chemists have been as follows during the past five years :—

		<i>Highest recorded.</i>		<i>Lowest recorded.</i>		<i>Mean.</i>		
1910.	Sugar o/o Canes	12.26	...	10.25	...	10.84	...	23 factories.
"	" o/o Sugar in Juice	90.00	...	84.99	...	87.3	...	" "
1911.	Sugar o/o Canes	11.82	...	9.70	...	10.84	...	18 "
"	" o/o Sugar in Juice	90.00	...	85.10	...	87.3	...	" "
1912.	Sugar o/o Canes	11.57	...	9.78	...	10.54	...	29 "
"	" o/o Sugar in Juice	89.70	...	83.30	...	86.8	...	" "
1913.	Sugar o/o Canes	12.24	...	10.20	...	10.95	...	25 "
"	" o/o Sugar in Juice	89.60	...	84.60	...	87.6	...	" "
1914.	Sugar o/o Canes	12.15	...	9.83	...	10.76	...	34 "
"	" o/o Sugar in Juice	90.2	...	83.1	...	87.2	...	" "

The average extraction for 1915 is estimated to have been better than during the previous years, although the extractions of some factories were comparatively low. The crop began late owing to non-completion of machinery changes and some estates finished very late with poor juices and extractions on account of the late start, shortage of water, or by reason of difficulties with new machinery installations.

17. Clarifying agents continue to receive attention. Albuslite was used in some estates and gave satisfactory results, but the supply was short. Phosphate of soda was used on a larger number of estates, but opinions seem to be divided as to the effectiveness of its use. Some chemists claim that better clarification was produced with less incrustations of "effets", but others were of opinion that although the incrustation was less in quantity, it was of a fine hard type, difficult to handle. Bisulphite of soda was also employed in some factories.

18. The decision of the Society of Chemists to organise the science of the sugar industry met with the approval of the Government. An Ordinance passed the Legislature to provide for the Registration of Agricultural Chemists. The claims of the 'pioneer' agricultural chemists of the Colony have been safeguarded, and the rising generations will be required to present themselves for two examinations before registration can be effected. The necessity for the organisation of the Empire's resources has been clearly demonstrated in Europe during the past 18 months, and the initiative taken by the chemists of Mauritius to become more closely organised is praiseworthy. The possible future needs of the colonial industries as well as their present wants have been carefully kept in view and not only should the status of the agricultural chemists of the Colony be gradually improved by reason of the registration examinations, but with close and careful supervision the registered agricultural chemists of Mauritius ought to eventually become a useful recruiting ground for the requirements of other parts of the Empire—particularly in those where a cane-sugar industry plays an important industrial part.

19. The total crop for 1915 is estimated as follows :—

<i>District.</i>				<i>Estimate (in 000 tons).</i>
Pamplemousses	...	...	...	18.120
Rivière du Rempart	...	...	...	21.950
Flacq	...	...	...	38.125
Moka	...	...	...	34.713
Plaines Wilhems	...	...	...	13.675
Black River	...	...	...	5.075
Savanne	...	...	...	40.775
Grand Port	...	...	...	43.095
				<hr/> 215.528 <hr/>



20. The proportion of grades of sugar manufactured in 1914 was as follows :—

Vesou	...	...	82.01 o/o
Syrups	...	...	9.01 o/o
Low sugars	...	...	8.98 o/o
			<hr/>
			100.00

At the beginning of the 1915 crop a smaller proportion of vesou than usual was turned out, but as the result of better prices offered for this type of sugar the proportion was greatly increased, and it is estimated that fully 84 o/o of total sugars produced during 1915 were white (vesou) crystals.

21. The Imperial Commission of Sugar Supplies contracted for 152,500 tons of vesou sugar at prices ranging from 16/10 to 17/6 per cwt. f.o.b. Other vesous were sold for France, Ceylon and India. Syrups went mainly to India, and low syrups to India and England.

22. The shortage of the crop resulted in keen competition amongst factories for planters' canes. Prices ranging from Rs. 15-17 per ton of canes were paid in cash, and sugar to the extent of 60-70 o/o of the extraction given where payment was effected in sugar. Some canes were transported considerable distances by the Government railway, often completely away from their district of origin.

Planters of Indian origin produced 24.2 o/o of the crop of 1914, but it is estimated that their proportion for the 1915 crop was not so high. Their plantations suffered more severely from the adverse climatic conditions than did those of the estates and larger planters where better systems of cultivation are practised.

23. Implemental tillage made some progress during the year, but this progress is slow when the shortage of labour on some estates is taken into consideration. A few estates are tackling implemental tillage seriously, while others are making half-hearted attempts. The work capable of being done by implements has been clearly demonstrated and the economies effected by such culture are now well known. Estates have been spending large sums for reducing labour charges in the factories, and must face the labour problem of the fields. Now that the industry is prosperous is the time to make the capital expenditure necessary for the installation of implemental tillage. It would be unwise to wait for a fall in prices in the value of sugar. Labour charges have been increased owing to shortage of labour and increased cost of living. Efforts should therefore be made as early as possible to economise on the use of labour wherever this is possible. There are still large areas in the Colony capable of being handled with implemental tillage on which no implement has yet been employed. It is however satisfactory to note that two small self-contained motor-ploughs were introduced during the year. These appear to be capable of good work in preparing land ready for planting.

### *Subsidiary Industries.*

24. The fibre industry suffered considerably during the year as the following table of export shows :—

			<i>Exports.</i>
			<hr/>
1913	...	...	... 2912.7 Tons.
1914	...	...	... 1899 "
1915	...	...	... 1430 "

The want of transport facilities and the excessive cost of freight for fibre made it impossible for the industry to work full time. Some factories continued to produce a reduced output throughout the year, while others worked for short periods for carrying out definite contracts. The prices for fibre ruled high, and even when the high cost of freight was deducted, normal profits were available. The No. 2 New Corona Decorticating Machine was installed in the Black River District during the year, but could not be worked until the end of the year, owing to shortage of



water. It is being run by a Ruston Proctor Suction Gas engine. The machine, after careful adjustment, should give satisfactory results. The fibre produced by this machine appears to be a better quality than that produced by the local grattes, but the industrial loss with the local aloes is high.

25. The crops of tea during 1915 were again satisfactory and found a ready sale at good prices on the local market. Experiments have been made with improved methods of cultivation upon one tea property, and have given very satisfactory increases of yields.

26. But little planting of coconuts upon Pas Géométriques took place during the year. In some cases, earlier plantations suffered from drought and had to be carefully mulched. Some of the plantations appear to be making satisfactory progress.

27. There was less disease on the Arabian Coffee during the year and the Liberian variety yielded good crops. Some further interest is being taken in the trial of newer varieties of coffee, and the Department has been able to procure selected seeds from the Javan Department of Agriculture.

28. The maize crop suffered slightly from the cyclonic winds of February and March. There was a slight extension of maize cultivation and the crop found a ready market. The second crop of October-November was very short owing to drought.

29. Vanilla gave an average crop, but there has been some difficulty in disposing of the produce on account of the closing of European markets.

30. Pistache showed an increased area under cultivation during the year. The crop was readily sold at remunerative prices. The oil extracting plant installed in Port Louis can readily handle much larger quantities of nuts than are produced locally. Manioc cultivation again slightly decreased in area, and the yields were rather poor on account of the dryness of the season. The early crop of potatoes was satisfactory, but the late crop suffered severely from leaf disease and gave but small yields. The supplies of vegetables throughout the year was satisfactory and good crops of fruits, with the exception of citrus fruits, were obtained.

### *Stock.*

31. The increase in the value of stock continues. The demand for good creole cattle is constant, but it is to be regretted that this keen demand has tended to make breeders include in their herds some very undesirable animals. Some breeders are paying close attention to the selection of their breeding animals, but these breeders are still in the minority. There is a tendency for local animals to be small and of low draught power, and therefore it is essential that selection should be made of the larger animals for breeding purposes. The three Madagascar bulls introduced by the Department have been appreciated and one of them was sold to a breeder for his herd. Enquiries were made as to the possibility of obtaining others, owing to the difficulty of obtaining the cattle ordered from India, through lack of steamship facilities. The installation of dipping tanks is not proceeding as rapidly as could be hoped, but if there is a possibility of controlling surra by dipping further tanks will be built.

### *Irrigation.*

32. The final report of Mr. G. M. Harriott, C. I. E., Consulting Engineer for Irrigation, was presented to the Council of Government during the year, and the works of the "La Ferme" scheme pushed on. The damage occasioned by the drought of 1915 render the necessity of large irrigation works in the Colony more patent.

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## SECTION II.

### WORK OF DEPARTMENT OF AGRICULTURE, 1915.

33. The outline scheme of work drawn up in 1913 on the inauguration of the Department has been kept in view. Progress has been made, but the work of the soil survey, owing to pressure of other work and to leave of absence of the Assistant Chemist, had to be postponed to the latter part of the year.

34. The Division of Phythopathology has continued investigating the diseases of sugar-cane and other economic crops, and the investigation of the sludge of "fascines" was enquired into. It appears that the sludges of "fascines" are produced in waters containing sugars, and that on one estate they were readily stopped when the "entrainment" in the factory was prevented. Co-operative spraying experiments for the control of potato diseases gave satisfactory results, and will be conducted over a larger area during the coming year. The detailed report on the work of this Division is given as Annexure I.

35. Annexure II gives the details of the work of the Chemical Division. The investigation of the milks of the Colony was completed during the year. The results show that the local milks, on the average, compare favourably with English and French milks. The experimental distillation of camphor and camphor oils was undertaken. It would appear that no recoverable camphor exists in the local trees and that the oils are abnormal. Investigations are being made to test whether the trees are the true camphors of Japan and Formosa or whether climatic conditions have produced physiological changes in the trees. The fortnightly control sheets amongst sugar factories were continued during crop and 24 factories contributed to the sheets.

36. The Entomological Division paid close attention to the control of *Phytalus Smithi* in the Pamplemousses district. A second large flight of insects took place during the season in February and the advice of the Board of Agriculture was taken in April as to the means of obtaining more collectors of insects during the period of emergence. The complete survey of the infected area was made from April to June. It revealed an increased infection on Beau Plan Estate and in lands belonging to Espérance. Every field surveyed showing an infection of over 20,000 larvæ per arpent was tilled and the larvæ dug out and paid for by Government at rates fixed previous to issue of the order. In certain instances, whether from apathy or indifference, some difficulties were experienced in getting this work of digging out larvæ performed, but eventually all, except one small planter, were persuaded to carry out the work. In this sole exception the work was performed by Government and the expenses recovered. This work was carried out to the satisfaction of the inspectors and a total of 3,917,000 larvæ were dug out. Waste lands have also been cleared throughout the whole area, in order that they should not serve as traps for the insects. The hatching out of adult beetles, mainly from December to January, has been normal—the greatest numbers being obtained, as was expected, from the Beau Plan and Esperance localities. The control of beetle collectors was closely supervised and appears to have been effective. With a view to obtaining a greater number of collectors in the months of December and January, special arrangements were made with the estates to turn out their engaged labourers and their families under estate sirdars or employers. Special premiums to the pecuniary advantage of these collectors were offered and although the analysis of results obtained shows an increased unit charge for beetles collected, it is hoped that the closer supervision, together with the fostering of an interest in the work amongst the sirdars or employees of the estates, will result in a greater destruction of insects in future years.

A further consignment of parasites was obtained from Barbados in August. It was sent by cool storage, but no adult parasites hatched out. Cool storage from South Africa to Mauritius was not available owing to the regular boats of the Union Castle line not sailing and it was therefore packed on ice. It is possible that the low temperature on this part of the voyage may have resulted in the failure above recorded.



Some increase in the numbers of the insects on the outskirts of the infected area has taken place, but there appears to have been little or no spread of the pest during the year. On those estates where systematic control measures have been adopted there have been encouraging reductions in the number of insects captured, but in other places there have been some increases. The total number of insects captured during the 1914 campaign was 51,357,406 beetles and 7,852,410 larvæ. There is every indication that there will be an appreciable reduction in these figures for the 1915 campaign.

The use of maize traps for the control of the pink borer (*Sesamia nonagrioides*) of sugar-cane gave most encouraging results and was adopted by several estates.

The bulletin prepared on insects affecting stored grains was warmly welcomed by the planting community and some estates are making plans for the erection of stores for the maize of 1916 crop.

37. The Veterinary Division has undertaken Tuberculin tests on the milch cows of the Plaines Wilhems district, has supervised the treatment of surra and has carried out a course of lectures on meat inspection, in addition to the usual routine work. Assistance has also been given in the consolidation and remodelling of the contagious and infectious diseases Ordinance and Regulations.

38. The work of the Statistical Division is detailed in Annexure V. The usual estimates of crop prospects were issued and proved to have been very carefully prepared. Agricultural Statistics for the Blue Book were prepared, and also a special bulletin on the varieties of sugar-cane under cultivation in the Colony.

39. The details of the work of the Experiment Stations Division are given in Annexure VI. The Agricultural Instructor paid special attention to the Demonstration Plots established for small planters at Triolet, Petit Raffray and Long Mountain, started two others at Bon Accueil (Flacq) and at Grand Bois (Savanne). He also visited schools for the purpose of selecting sites for laying out school gardens and supervised field demonstrations in spraying.

The work of the Central Experiment Station at Réduit is shown in the report of the Chief Overseer. The collection of sugar-cane varieties has been increased by varieties received from other cane-growing countries and by seedlings raised on the Station and at the Pamplémousses Experiment Station. The manurial experiments with sugar-cane have been increased and small trials with irrigation undertaken. Of the most promising of recently introduced varieties of canes, a distribution was made during the year to selected estates in different districts of the Colony.

These canes will be closely followed and further distributions made as early as possible. Varietal tests with pistache, maize, manioc and coffee were made. The stock kept at this station has given satisfactory results during the year. An experimental dairy for the supply of milk to Moka Hospital, and to form the basis of the improvement of milch cattle of the Colony was begun. All cows bought have been especially selected, and tested with tuberculin. Considerable interest is taken in the poultry section, and a number of people have during the year undertaken to establish small poultry yards for the supply of eggs and birds for the table. The demand for the eggs of the Department has been constant and the results reported appear to have been satisfactory.

The raising of seedling canes is now largely centred at the Pamplémousses Experiment Station as areas of land supplied with irrigation water are available. After the first year's selection, the varieties are sent to Réduit for extended trial. Trials with varieties of pistache, maize, rice, manioc, sweet potatoes, yams, soy beans, cow peas and tobacco were also made at Pamplémousses and the results obtained are detailed in the Overseer's report. At Le Réduit Ground trials are made with cultivation of different varieties of vegetables, while at Curepipe Experiment Station regular plantations of camphor, tea, pine-apples and bananas have been made.

40. The Board of Agriculture met twice during the year and had under consideration a variety of subjects dealing with the Agriculture of the Colony. The Phylalus question was fully dealt with, and the introduction of motor ploughs and the erection of a granary for the drying of maize considered.

## *Co-operative Experiments with Estates.*

41. The manurial experiments to test the value of the elements of mixed guanos used in the Colony for sugar-cane were cut in virgins, under the supervision of the Chief Overseer, on 9 estates. The results varied in the different districts and the Board of Agriculture was of opinion that the figures for ratoons should be obtained before the publication of the results. However, it may be stated that marked increases occurred on most of the plots after application of molasses, small increases after applications of lime. The application of sulphate of ammonia without cinereals in virgins did not give satisfactory results, and it is possible that where large dressings of farm-yard manures are made to virgins the use of chemical salts are not remunerative unless applied in small quantities as "petit guanage" early in the growth of the young canes in order to "form the souche".

The results of heavy dressings of lime to ascertain its soil-sterilisation effect were negative. It is possible that the extreme dryness of the season made the lime non-effective.

A further manurial plot with canes was laid out during the year at Plaisance Estate. It was also arranged to make varietal tests with canes at St. Aubin Estate and with recently introduced varieties on coffee at Frederica, Bel Ombre Estate.

## *Examination of Plant Imports.*

42. Importations of plants have been regularly examined by the scientific officers of the Department. Imports through Customs were examined on 79 occasions and at the Post Office 34 times during the year.

## *Publications.*

43. The following bulletins were prepared during the year :—

GENERAL SERIES, 4. Part i — "*Manufacture of Sugar in Louisiana.*"

— " ii — " " " " "*Cuba and Porto Rico.*"

— " iii — " " " " "*Java.*"

(These bulletins contained the reports of Mr. J. F. Clarenc's visits to Louisiana, Cuba, Porto-Rico and Java on the Scholarship awarded to him out of the Station Agronomique Funds. In some cases mechanical features of factories were not

published in full).

GENERAL SERIES 5. "*The Fibre Industry in Mauritius*".

(This description of the Fibre Industry of the Colony was prepared for the International Congress of Tropical Agriculture held in London, 1914).

GENERAL SERIES 6. "*The Irrigation of Sugar-Cane in Mauritius*".

(A brief account is given of the scientific principles that underlie irrigation, and the essentials that have to be kept in view in the practical use of irrigation waters. It was prepared in order to synchronise with the opening of the "La Ferme" Irrigation scheme).

SCIENTIFIC SERIES 2. "*Insects injurious to Stored Grains.*"

(The Entomologist, in this Bulletin, gives a review of the insects that affect stored grains in the Colony and the remedial measures that can be taken for their control and the prevention of damage).

SCIENTIFIC SERIES 3. "*The Composition of Milks of Mauritius*".

(This Bulletin prepared by the Chemist contains the details of the Milk analyses undertaken by the Chemical Division of the Department).

STATISTICAL SERIES 2. "*The varieties of Canes cultivated in Mauritius*".

(In the Press).

(In this Bulletin are given the details of the investigations undertaken by the Statistician, with a view to obtaining accurate information as to the distribution in the Colony of the numerous varieties of canes under cultivation).



The following special leaflets were prepared for the Board of Agriculture and for general distribution in addition to the regular reports of the Statistician and of the scientific officers of the Department :—

1. PHYTALUS SMITHI in Pamplemousses.
2. Manufacture of Sugar-Cane Wax.
3. Report on Tuberculin Tests on Milch Cows in Plaines Wilhems.
4. The Mechanical unloading of Canes in Mauritius.
5. Particulars respecting Motor-Ploughs.
6. The Kiln-drying of Maize.

The following circulars were sent to all agriculturists :—

1. Prevention of moisture evaporation from soils during drought.
2. Control of Pink Borer with Maize Traps.
3. Contributions to monthly Mutual Control Sheets during crop.
4. Results of Spraying Experiments for control of potato leaf disease.
5. Sheath disease of cattle.

### *Legislation.*

44. The following Ordinances, Proclamations and Regulations relating to the Agriculture were passed during the year :—

- Ordinance No. 11 of 1915—To consolidate the Laws on Animal Diseases.  
 „ 20 of 1915—To provide for the Registration of Agricultural Chemists.  
 „ 25 of 1915—To amend the Co-operative Credit Societies Ordinance No. 4 of 1913.  
 „ 27 of 1915—To amend and Consolidate the Laws on Vanilla.
- Proclamation No. 3 of 1915—To prohibit the removal of earth, manures, cane trash, &c., from Phytalus infected area in the Pamplemousses District. (To extend Pr. 110 of 1913).  
 „ „ 22 of 1915 „ „ „ (To extend Pr. 3 of 1915).  
 „ „ 42 of 1915—To allow importation of foods, ducks, &c., from Madagascar, Ceylon, and Tropical African Ports.  
 „ „ 55 of 1915—To prohibit the importation of serpents, mongooses and living insects.

Regulations re : Animal Diseases —Under the Animal Diseases Consolidation Ordinance No. 11 of 1915.

- „ re : Importation of Plants and Animals into Rodrigues—To provide against the introduction of pests into Rodrigues.

The preparation of these Ordinances, Proclamations and Regulations took up a considerable amount of time, as the practices of other colonies were given careful consideration.

### *Educational.*

45. The establishment of School gardens for primary schools is still receiving consideration. The Agricultural Instructor was placed at the disposal of the Education Department for the purpose of selecting and reporting upon suitable sites for these school gardens. The Entomologist, Assistant Chemist and Agricultural Instructor have been occupied in their leisure time in preparing sections for the proposed Nature Book for the use of the Elementary Schools.

The Botanical classification section at Curepipe Gardens has proved to be interesting and should be useful for the teaching of Botany in the Royal College when that is undertaken. The Department of Agriculture has been in close touch throughout the year with the Department of Public Instruction in connection with the improvement of the Science side of the Royal College. It has been decided to provide for regular courses in Chemistry, Botany and Agricultural Science and the syllabus for these studies has been drawn up.

Two students (viz : Messrs. J. Lagesse and G. Antelme) at the School of Agriculture established at the Head Office Laboratories at Réduit successfully passed their diploma examination in the sciences of Agriculture. These students had previously worked in the laboratories of the Station Agronomique. Diplomas were issued to them. One of these has obtained employment upon a sugar estate while the other is undertaking research work in the laboratories of the Department on Soil problems. Three students in their second year received training and two others were admitted during the year. Two of the second year students worked as assistant chemists in sugar-factories during the crop.

The preparation of practical laboratory note-books for the use of students has been begun. The chemical section has been completed and those sections dealing with Botany and Entomology will be put in hand at an early date.

There are also repeated requests on the part of assistant chemists on sugar estates to be allowed to work in the laboratories of the Department during the non-crop season, and arrangements are being made, when the extension of buildings is completed, to organise short courses in agricultural chemistry for these persons.

### *Expenditure.*

46. The expenditure of the Department has been as follows :—

Personal Emoluments ... ..	Rs. 52,774.47
Maintenance of Gardens ... ..	11,383.60
"    " Apprentices ... ..	186.98
General Services ... ..	10,073.64
Prevention of Plant Pests and Diseases ...	14,889.54
"    Animal Diseases ... ..	745.72
Experiments with Aloe Fibre ... ..	391.60
Upkeep of Stock ... ..	1,906.80
Establishment of Demonstration Plots... ..	1,024.14
Travelling expenses ... ..	3,555.71
"    of Registrar, C.C.S.... ..	17.00
Special : Erection of Fibre Machinery... ..	31,179.03
"    : Introduction of Stock ... ..	2,836.69
"    : Establishment of Experimental Dairy .....	328.65
Total ... ..	Rs. 131,293.57

### *Receipts.*

47. The receipts were as follows :—

Analytical Fees ... ..	Rs. 534.00
Veterinary Fees (Customs, Analyses, Animal treatment)... ..	1,245.50
Students' Fees ... ..	217.50
Rent of Tea Plantation ... ..	1,100.00
Sale of Canes ... ..	2,906.29
"    " Plants, flowers, &c., ... ..	734.69
Services and Sale of Animals and Poultry ...	1,355.25
Miscellaneous ... ..	3.00
Total ... ..	Rs. 8,096.23

### *Co-operative Credit Societies.*

48. The Director of Agriculture was appointed Registrar of Co-operative Credit Societies on the departure of Mr. Lala Jai Gopal for India, on October 29th, 1915. The Agricultural Instructor was appointed Inspector of Societies. There were at the end of 1915, 21 societies in operation and one in liquidation. The total membership of these societies approximates 2,400. They require for the present close supervision ; but there appears to be some prospect for their ultimate success. The operations of most societies appeared to be successful during the year, but in some localities repayments of loans have been slow—probably owing in part to the short crops produced. These Co-operative Credit Societies should be able to provide to their shareholders money for cultivation purposes at the time when the cultivation should be carried out. So many of the efforts of small planters produce little or nothing because these efforts are applied to their cultivations at the wrong time. This is largely due to the want of money when it is most required and the Societies ought to be able to rectify this.



### *Staff Changes and Leaves of Absence.*

49. *Mr. Valasois* was appointed Overseer, Le Réduit Grounds, on November 15th, 1915.

*Mr. M. Valaythen* was appointed Assistant Overseer, Pamplémousses Gardens, on September 1st, and confirmed from December 1st, 1915.

*Mr. H. Baichoo* was appointed Guardian, Pamplémousses Gardens, on September 1st, and confirmed from December 1st, 1915.

The following leaves of absence were granted during the year other than occasional departmental and sick leaves :—

*Mr. H. Robert* : 30 days in August.

*Mr. de Sornay* : 42 „ „ August-September.

### *Miscellaneous.*

50. Enquiries have been made during the year into the question of preparation of Industrial alcohol and the possibility of its use in the Colony for automobiles and for estate tramway locomotives. Enquiries have also been made at the request of the Department by the Imperial Institute into the possibility of producing a better quality of lime for building and sugar-factory purposes by means of the rotary cement furnaces. The details obtained are now under consideration by local engineers.

I have, &c.,

F. A. STOCKDALE,

March 18th, 1916.

Director of Agriculture

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## ANNEXURE I.

## REPORT ON THE WORK OF THE DIVISION OF

## PHYTOPATHOLOGY

FOR THE YEAR 1915.

The general climatic conditions throughout 1915 were unfavourable to the spread of fungus diseases. No serious epidemics occurred during the year, with the exception of an outbreak of potato and tomato leaf disease during the months of July, August and September. The extreme dryness of the season was favourable to the spread of a root disease of the sugar-cane, caused by a weak parasite of the genus *Marasmius*, and several estates sent in specimens of this disease for investigation. The leaf petiole and stem disease of manioc (caused by *Gleosporium Manihotii*) caused defoliation in some districts in the month of September, but did not cause as much damage as in the year 1913. The pithy deterioration of the White Tanna reported in 1914 was again prevalent in certain districts during the year. This deterioration was more prevalent in certain parts of Moka, Grand Port and Plaines Wilhems districts, but in other localities it was less than during the previous year. Other Tanna varieties such as Striped Tanna, Green Striped White Tanna, Purple Striped White Tanna were also found to be affected during the past year.

*Sugar-Cane.*

In the first half of the year, planters were somewhat concerned respecting a physiological disorganisation noticed in virgin fields of white and striped Tanna varieties. An abnormal shooting of the buds took place, commencing from the lowest on the stem. Subsequently there was gradual withering and ultimate rot of the top shoot. The internal tissues showed traces of a dark yellowish-red gummaeous substance in the vascular tissues, but no pathological organism could be isolated, nor did injections into healthy canes give any positive results. This physiological disorganisation was wide-spread and caused some reduction in the crop of certain fields on a few estates. After May, however, its occurrence seemed to stop and no further spread was recorded after that month.

*Red Rot*—caused by *Collectotrichum falcatum*—occurred in September and October upon one estate in Flacq following an attack of the grey stem borer (*Diatrea striatalis*). The control measures taken against this disease upon an estate in Grand Port, where the disease was common in 1913 and 1914, appear to have given satisfactory results, for only a very few canes were affected on this estate during the year under review.

*Pithy Deterioration*—Further investigations were made upon this disease during the year. A bacterium, commonly found in the disorganised tissues, was isolated and infection experiments begun at Réduit. These experiments gave inconclusive results as all the canes of Tanna varieties at Réduit were naturally affected with this pithy deterioration from the month of August onwards. There is no doubt that this disease causes serious losses of sugar in the Tanna varieties. It has not, as yet, been found in any other varieties with the exception of the Fotiogo. Seedling canes appear to be immune, and the complaints made by planters that the Tanna canes have not weighed well during the past crop are undoubtedly due to this disorganisation of the parenchymatous tissues between the water-conducting vessels of the stem and their supporting fibres. The evidence accumulated so far seems to point to a bacterium being responsible for the disease.

*Root disease*—caused by a species of *Marasmius*, was more noticeable during the year, especially in the dry districts. The conditions of drought prevailing throughout the year gave the weak parasite which is the cause of this disease an opportunity of causing more damage than it is capable of during normal seasons.

*Smut*—Examples of this disease came under observation for the first time during the year. One estate in Flacq and another in Black River forwarded specimens for examination. This disease is caused by *Ustilago sacchari* and is well-known in most countries growing sugar-cane. It does not, save under exceptional circumstances, occasion much serious damage. On one estate in Black River several ratoon clumps of canes were seriously affected and had to be destroyed.



### Coffee.

The leaf disease of Arabian coffee caused by *Hemileia vastatrix* was not so common during the year. It was in one instance kept well in control by spraying with Bordeaux mixture. A few spots were noticed during the year on the Robusta variety of coffee.

### Manioc.

The manioc leaf and stem disease caused by *Gleosporium manihotii* was again common in some localities. In some instances reduced crops of manioc roots resulted. Some recently introduced varieties of manioc appear to be more resistant to this disease than the local kinds.

### Pistache.

A leaf spot caused by *Uredo arachis* was again observed during the year, but the most serious leaf spotting was caused by *Cercospora personata*. This caused complete defoliation in some instances and was responsible for much more damage to the newly introduced varieties of pistache than to the local kind.

### Potatos and other Solanaceous Plants.

The leaf disease caused by *Phytophthora infestans* was common during the months of July-September. Co-operative spraying experiments conducted by potato-growers under the supervision of the Agricultural Instructor gave most encouraging results. It was demonstrated that this disease can be kept under control if spraying is begun early. Sprayings should, however, be carried out every 8-10 days, as dews during the months of July and August are heavy.

Tomatos raised from imported seeds are badly infected with leaf disease, but the local pomme d'amour can resist to a certain extent. The improvement of the local kinds is being undertaken with a view to obtaining good tomatos which can resist disease. The sleeping disease caused by *Fusarium Lycopersici*, and collar rot are very common and cause considerable damage. Egg fruits (*Solanum melongena*) were badly affected with stem blight during the months of March and April.

During the warm months, this disease does not appear to be common.

### Filao (*Casuarina equisetifolia*).

A root disease of filao is under investigation. A considerable number of adult filaos died during the year, but the investigations regarding the causative agents for this disease were not completed by the end of the year.

### Tobacco.

The experiments with the cultivation of Turkish tobacco at Pamplémousses failed during the year on account of persistent attacks of a mildew caused by a species of *Erysiphe*.

### Garden Plants.

Numerous fungus and bacterial diseases of garden plants were examined during the year. The following are the most important :—

#### VEGETABLE GARDEN.

<i>Host.</i>	<i>Disease.</i>	<i>Causative Agent.</i>
Cabbage, Cauliflower	Soft rot	<i>Baccillus carotivorus</i> .
Beans and Peas	Mildew	<i>Erysiphe Polygoni</i> .
Peas	Collar rot	<i>Fusarium</i> sp.
Beet	Leaf blight	<i>Cercospora beticola</i> .
Celery	Leaf blight	<i>Cercospora Apii</i> .
Cress	Damping off	<i>Pythium de Baryanum</i> .
Cucumber	Mildew	<i>Erysiphe cichoriacearum</i> .
Strawberry	{ Leaf spot	<i>Mycosphaerella Fragorise</i>
	{ Mildew	<i>Sphaerotheca</i> sp.
Tomato	{ Fruit rot	<i>Macrosporium Solani</i> .
	{ Leaf spot	<i>Septoria Lycopersici</i> .

## FLOWER GARDEN.

<i>Host</i>	<i>Disease.</i>	<i>Causative Agent.</i>
Rose	Mildew	Sphaerotheca pannosa
Antirrhinum	Collar rot	Fusarium sp.
Impatiens	Wilt	Fusarium sp.

## FRUITS.

Mango	{ Flower & Fruit blight	Bacillus mangiferae.
	{ Ripe rot	Gleosporium sp.
Grape	{ May mildew	Plasmopora viticola.
	{ Anthracnose	Gleosporium ampelophagum.
Peach	Rust	Puccinia sp.

F. A. STOCKDALE,

11th February, 1916.

Phytopathologist.

## ANNEXURE II.

## REPORT ON THE WORK OF THE DIVISION OF

## CHEMISTRY

FOR THE YEAR 1915.

The following analyses were carried out during the year for agriculturists :—

			<u>Samples.</u>		<u>Dosages.</u>
Artificial manures	...	...	32	...	106
Farm-yard manures	...	...	15	...	76
Soils ...	...	...	6	...	30
Lime...	...	...	9	...	9
Sugar-house products	...	...	19	...	59
Miscellaneous ...	...	...	9	...	39
			<u>90</u>		<u>319</u>

The fees collected for the analyses amounted to Rs. 534.

The following analyses in connection with research and experimental work of the Department were performed :—

			<u>Samples.</u>		<u>Dosages.</u>
Manures	...	...	54	...	70
Soils ...	...	...	5	...	70
Cane-juices	...	...	648	...	1,944
Sugar-canes	...	...	9	...	27
Milks ...	...	...	74	...	444
Fodders	...	...	5	...	33
Rain-waters	...	...	27	...	81
Camphor	...	...	27	...	54
Lime-juices	...	...	3	...	6
Miscellaneous	...	...	4	...	15
			<u>856</u>		<u>2,744</u>



The analyses of artificial manures comprised samples from all manures imported into the Colony. The samples were taken by the Customs Authorities and consisted of : Whale flesh 4 ; Sulphate of Ammonia 26 ; Nitrate of Soda 3 ; Guano phosphate 1 ; Superphosphate 4 ; Meat meal 6 ; Dried blood 1 ; and Bone phosphate 1.

The Sulphate of Ammonia and Nitrate of Potash imported in 1915 were poorer in quality than those of years before the war :

	<i>Sulphate of Ammonia:</i>	<i>Nitrate of Potash:</i>	
	o/o Nitrogen.	o/o Nitrogen.	o/o Potash.
1913 (Aug.-Dec.)	20.52	13.12	44.7
1914 (Jan.-July)	20.3	12.02	40.4
1915	20.29	11.07	43.2

The following table shows the average of compositions of artificial mixtures applied in sugar cultivation:—

AVERAGE COMPOSITION OF GUANO MÉLANGÉ ANALYSED.

	<i>Total Nitrogen</i> o/o.	<i>Phosphoric Acid</i> o/o.	<i>Potash</i> o/o.
1910 ... ..	10.74	6.51	7.23
1911 ... ..	10.12	6.67	8.93
1913 ... ..	11.20	13.27	7.11
1914 (Jan.-July)...	9.70	10.02	6.50
— (Aug.-Dec.)	11.39	9.40	6.85
1915 ... ..	9.23	9.11	4.19

In continuation of the soil survey, 5 samples from the Pas Géométriques have been analysed, and a start made with estates soils in the Cent Gaulettes-Riche-en-Eau valley.

A further series of trials on the chemical effect of molasses on soil was laid down during the year. Earlier trials by the Assistant Chemist indicated a probable increase of available plant-food after treatment and his results are being verified and extended.

Towards the end of the year, analyses were begun of each plot of an experimental field at Réduit, in order to ascertain the effect of long-continued various systems of manuring.

Determinations of soil moistures have been made throughout the year.

### *Milks.*

In September, the survey of the milks of the Colony was completed, 138 samples drawn under estate supervision from cows kept by the Indian labourers having been examined. For purposes of record the information should be useful; and the details of analyses are being issued in bulletin form. The milks compare very favourably with English and French ones.

### *Camphor.*

During the year, the possibility of obtaining camphor from the numerous trees in the Island was again investigated ; 8 distillations with a large still and 19 with a laboratory still were made. As a result, it appears extremely probable that no recoverable camphor exists in local trees. Oil alone was obtained in all cases, although trees were tested from different altitudes. Several different forms of still were tried. The trials were made on material cut in April, May, June, September and October, and a few further trials in the hot weather, say February and March, will be undertaken.

### *Miscellaneous.*

Analysis of the rainfall is being continued, and all meteorological instruments have been centred in a shed for convenience.

Arrangements were set in hand towards the end of the year for taking accurate readings of soil temperatures at various depths.

As in the past, the figures of the Contrôle Mutuel received from various sugar factories were prepared into a comparative statement by the Assistant Chemist.

Samples of lime-juice were analysed during the year. They compared very favourably with good West Indian lime-juice.

### *Educational.*

In April, two new students were admitted for training, and two students were attached to factories for the crop from June to December : one at Britannia, and the other at Médine. In all, 5 students and one volunteer student received training in the chemical laboratory during the year.

In July, examinations for students were held. The whole of the practical work for students in Agricultural and Technical Chemistry has been thrown into the form of laboratory note-books. These have proved of sufficient value to warrant their being printed.

GILBERT AUCHINLECK,

3rd February, 1916.

Chemist.

### *ANNEXURE III.*

REPORT ON THE WORK OF THE DIVISION OF

### ENTOMOLOGY

FOR THE YEAR 1915.

### *Collections.*

The collection of insects injurious to plants and to domestic animals has been again extended during the year 1915.

A special collection of the enemies of the sugar-cane in their different stages and of plants damaged by them together with their natural foes has been set up in show-cases in the Entomological Laboratory.

### INVESTIGATIONS OF INSECT PESTS.

#### *Sugar-cane.*

Visits were frequently paid to sugar estates and other places for various investigations and specially for the control of borers and moutoucs in sugar-cane cultivation.

The life-history and habits of the three species of borers and their parasites have been thoroughly worked out. A special bulletin on these pests and their parasites is in course of preparation.

These investigations brought to light a practical means of effectively controlling the pink borer *Sesamia nonagrioides*. This consists of planting maize in the young cane plantations. The maize acts as traps and the borers can be readily obtained and their parasites liberated before the destruction of the borers. This system of trap crops of maize has been adopted by several estates and has proved most successful.

Full particulars of the results obtained have been published in a report to the Board of Agriculture and distributed to all planters.

A survey of the area infected with the *Phytalus Smithi* was made in January and showed a slight extension of the pest in the Northern borders.

An amended Proclamation to include St. André, part of Mon Piton and Rosalie-Constance was published in January 1915 as Proclamation No. 3 of 1915.

The usual complete census was made in May and June and showed that at The Mount and Mon Rocher Estates the infection was considerably reduced when compared with that of 1914, whilst at Beau Plan and Espérance there has been a marked increase.



By the middle of December, at the time of the greatest emergence, a special premium was given to the labourers of the estates for the destruction of beetles which resulted in the capture of five millions in about a fortnight out of 23,587,364 caught during the month of December.

As shown by the table on page 39, 41,503,942 beetles were destroyed in 1915 ; of these 17,580,782 belonged to the 1914-15 emergence and 23,923,160 to that of 1915-16. 3,917,700 larvæ were dug out at Mon Rocher, The Mount, Beau Plan and from small planters' lands, giving a total number of 45,421,642 insects destroyed.

The last campaign from July 1914 to June 1915, i.e., during the insect life-cycle resulted in the destruction of 51,357,406 beetles.

The greatest flight was in December 1914 when 31,179,940 beetles were captured and a second large flight occurred in February 1915 when 14,646,931 beetles were caught.

Another consignment of *Tiphia parallela* was received from Barbados in the nymphal stage in August. The cocoons were stored in the cold chamber of the ship by which they were transported ; but from Durban to Mauritius no such accommodations were available and consequently they were stored on ice. It is concluded that the temperature must have been made too low, for no insects hatched out.

Enquiries have been at Madagascar where a species of *Tiphia* has been reported to exist and it is hoped that this species may prove useful against *Phytalus*.

### *Insects attacking Stored Grains.*

A bulletin on insects attacking stored grains has been published and circulated to agriculturists.

### EDUCATIONAL.

Five students received regular instruction in Economic Entomology during the year and three of them worked for some time in the laboratory and were instructed in the methods of field treatment and researches.

19th January, 1916.

D'EMMEREZ DE CHARMOY,

Entomologist.

### ANNEXURE IV.

#### REPORT ON THE WORK OF THE

#### VETERINARY DIVISION

FOR THE YEAR 1915.

### *Importation of Animals.*

During the past year, 40 steamers and schooners have been inspected. These vessels brought into the Colony 228 horses, 6,866 cattle, 400 sheep, 1,532 pigs, 4,359 goats, 28 dogs, and 2 cats ; and the fees paid with the Customs for Veterinary Inspection amounted to Rs. 1,117.50. The Regulations relative to importations of animals in Mauritius have been entirely re-cast. They have been prepared to allow of the landing of animals only after the period of incubation of contagion or infection has expired. Provision has also been made for quarantining animals on landing and for testing or treating them with serums. New regulations to provide for the control of outbreaks of diseases of a contagious or infectious character in the Colony have also been issued

## *Inspection of Government Animals.*

The animals of the Government were examined every week.

Horses of the Police Department have been treated for the following affections:—*sparvin*, *eczema*, abscess, limping, &c. During the course of the year one horse died. It had been severely wounded and died of *Septicæmia*. Two new horses were examined previous to purchase.

Two donkeys of the Medical and Health Department were cured of *Lamenitis*.

One of the donkeys of the Poor Law and Immigration Department was cured of an *exostosis* on the third phalangum.

The animals attached to Barkly Asylum suffered frequently from *Lamenitis*; but there has been a considerable improvement since the management and feeding of the animals have been placed under closer control. One animal suffered from *pleuresia*, but recovered.

Two donkeys of the Forest Department were cured of *surra* and one bull at Château d'Eau was successfully treated for abscess. One female donkey died of *tétanus* after parturition.

The animals of the Agricultural Department are in good condition. One ewe was lost during the year from blood poisoning. One of the rams was affected with a wound on the sheath; but the treatment adopted was successful.

### *Tuberculin Test.*

Tuberculin tests were officially started in the Colony in 1915. The object was to find out the percentage of tubercular cows. The tests were started in Plaines Wilhems in February, and the details of animals tested with their results have been placed before the Board of Agriculture. The results indicated two tubercular cows, which were slaughtered, and three suspects, which on being re-tested gave negative results. The percentage of tubercular cows in Plaines Wilhems worked out at 1.08 o/o of those tested.

### *Treatment of Surra.*

During the year eight equines have been treated for *surra*:

Horses.	Mules.	Donkeys.	Poneys.
2	1	4	1

The treatments employed were (1) *Soamin* and *Arsenic*, and (2) *Laveran's* 01.

Two animals recovered; two died of general emaciation; one died accidentally; another after several recidivisms, and two others died of complications.

In the country districts, *surra* in cattle treated with the *arsenic* and *soamin* method recovered rapidly. On every estate where the treatment was carefully given under the control of the manager, satisfactory results have been obtained.

### *Meat Inspection.*

Daily meat inspection was made at Rose Hill abattoir.

29 carcasses were seized, in addition to organs such as livers, lungs, mammary glands, &c., for fever, bruising, abscess, tuberculosis, &c. The seizures for tuberculosis were forwarded to the Bacteriological Laboratory for the purpose of preparing *Tuberculin*.

In the month of December, lectures were given to Sanitary Inspectors on meat inspection. After the lectures, practical demonstrations were given in the abattoir. This course of lectures was well attended and appeared to be well appreciated.

F. E. LIONNET,

31st January, 1916.

Government Veterinary Surgeon.



## ANNEXURE V.

REPORT ON THE WORK OF THE  
STATISTICAL DIVISION

FOR THE YEAR 1915.

The following statistical documents were prepared during the year :—  
 May,—Statement of Sugar-Crop Prospects, 1915.  
 June,—Agricultural Statistics for Blue Book.  
 July,—Final Statement of Sugar-Crop, 1914-15.  
 September,—Average sale prices and local consumption of Sugar-Crop 1914-15.  
 October,—Cane varieties under cultivation in the Colony. (Bulletin, Statistical Series).  
 December.—Final Estimate 1915-16 Crop.

*Statistics of the 1914-15 Sugar-Crop.*

The total Sugar-Crop of 1914-15 was T 277,360. It was the largest produced in the colony.

The total quantity of cane crushed was T. 2,612,127. The extraction per cent. of cane was therefore 10.62, against 10.78, in 1913-14 ; 10.43 in 1912-13 ; 10.66 in 1911-12 and 10.63 in 1910-11.

Out of the total amount of T. 2,612,127 cane crushed, T. 1,361,146 were cane grown by the factories themselves, and T. 1,250,981 by the 'passeurs'. Of the latter T. 632,187 were grown by Indians. Of the total cane manipulated 52.11 o/o were grown by the factories and 47.89 o/o by planters ; and 50.5 o/o of the planters' cane were Indian-grown.

The ratio of planters' cane to total crushed was :—

in 1914-15,—	47.89 o/o
„ 1913-14,—	46.97 „
„ 1912-13,—	41.42 „

The highest percentage is to be found in the Plaines Wilhems District (74.09 o/o, in 1914-15 and 72.36 o/o in 1913-14) ; and the lowest in Savanne (22.87 o/o in 1914-15 and 22.65 o/o in 1913-14).

The other districts gave, for 1914-15 : Black River 70.5 o/o ; Flacq 56.62 o/o ; Riv. du Rempart 51.7 o/o ; Grand Port 49.15 o/o ; Moka 48.15 o/o and Pamplemousses 43.87 o/o.

The following table shows that the Indian cane production is not in proportion with the area occupied by them :—

	CULTIVATION.				PRODUCTION.			
	<i>Ratio of Indian cane cultivation to total cane cultivation.</i>				<i>Ratio of Indian cane production to total cane production.</i>			
1914-15	...	...	37.15 o/o	...	...	...	24.2 o/o.	
1913-14	...	...	35.77	...	...	...	23.3	
1912-13	...	...	33.85	...	...	...	20.06	

*Extraction.*

The extraction of sugar per cent. of canes has been as follows in the different districts :—

<i>District.</i>	1914-15.	1913-14.	1912-13.	Mean.
Plaines Wilhems	11.04	11.15	10.82	11.00
Pamplemousses	10.98	10.99	10.65	10.87
Moka	10.65	10.91	10.56	10.71
Savanne	10.65	10.75	10.37	10.59
Black River	10.51	9.25	9.73	9.83
Grand Port	10.50	10.74	10.35	10.53
Rivière du Rempart	10.43	10.90	10.90	10.74
Flacq	10.43	10.55	10.03	10.34

Out of the 59 usines, twelve had an extraction of above 11 o/o, 23 between 10.50 and 11 o/o, 18 between 10 and 10.49 o/o, and 6 below 10 o/o.

The grades of sugar produced were as follows :—

Vesou...	...	...	82.01 o/o	: T.	227,462
Syrup	...	...	9.01 o/o	: T.	24,990
Low Sugars	...	...	8.98 o/o	: T.	24,908
					<hr/>
					T. 277,360
					<hr/>

#### *Period of Crop.*

The crop period lasted in all the factories for an average of 111.66 working days. The factories in the Rivière du Rempart district took the longest time to complete their crop, viz : 121.6 days, and Savanne the shortest, viz : 104 working days.

#### *Output of Factories.*

The average daily work and output per factory was as follows :—

<i>District.</i>	<i>Work.</i>	<i>Output.</i>
Moka ... ..	T. 579.8 Cane.	T. 61.73 Sugar.
Flacq ... ..	458.7	47.84
Plaines Wilhems ...	408.5	45.08
Rivière du Rempart ...	396.4	41.35
Savanne ... ..	383.3	40.81
Grand Port ... ..	369.0	38.73
Black River ... ..	326.6	34.30
Pamplemousses ...	281.9	30.95
<hr/>		<hr/>
General average ...	396.5	42.1
<hr/>		<hr/>

Out of 59 factories, 2 crushed during the whole crop less than T. 20,000 ; 4 crushed between T. 20,000 and T. 25,000 ; 8 between 26,000 and 30,000 ; 20 between 31,000 and 40,000 ; 10 between 41,000 and 50,000 ; 3 between 51,000 and 60,000 ; 4 between 61,000 and 70,000 ; 5 between 71,000 and 80,000 ; 2 between 90,000 and 100,000 and 1 above 100,000.

One factory manipulated less than T. 200 cane daily ; 17 from 200 to T. 300 ; 20 from 301 to 400 ; 10 from 401 to 500 ; 3 from 501 to 600 ; 5 from 601 to 700 ; 2 from 701 to 800 and one 1,200.

One factory had a daily output of sugar of less than T. 20 ; 3 produced from T. 20 to T. 25 daily ; 10 from 26 to 30 ; 12 from 31 to 35 ; 8 from 36 to 40 ; 14 from 41 to 50 ; one from 51 to 60 ; 5 from 61 to 70 ; 3 from 71 to 80 and 2 more than 80.

The average output of sugar per factory has been T. 4,701, against T. 4,232.2 in 1913 ; T. 2,810 in 1903 ; T. 1,400 in 1893.

16 Usines made more than T. 5,000. They totalled T. 125,109, i.e., an average of T. 7,819 per usine.

The 7 largest factories made together T. 67,311.5, with an average of T. 9,615.9 per factory ; against T. 9,014 in 1913 ; T. 7,867 in 1909 ; T. 5,328 in 1906 and T. 4,777 in 1903 (years of large crops).

#### *Labour employed in factories.*

The best ratio ton-sugar-day to number of men in the factory (including hands at the chain) was registered at Pamplemousses, where a factory had a daily average output of T. 31.21 sugar with a daily average of 80 factory labourers. This gave 2.56 men per ton of sugar, or .39 ton of sugar per man per day.

The worse ratio was 10.29 men per T-sugar, or .097 ton sugar per man per day.

Out of 48 factories which gave the number of men employed, 5 were below 3 men per T-sugar (or .333 ton per man). 8 factories had a ratio of from 3 to 3.5 ; 10, from 3.51 to 4 ; 13 from 4.01 to 4.5 ; 4 from 4.51 to 5 ; 5 from 5.01 to 5.5 ; 1 from 5.51 to 6 ; and 2 above 6.



No factory with a daily output of T. 30 sugar or less showed a ratio inferior to 3.51.

No factory above T. 50 a day had a ratio above 4.50.

The following table is striking :—

<i>Daily output.</i>	<i>No. of Factories.</i>	<i>Average ratio</i> (men per T-sugar).
T. 30 or below ...	18	4.84 or T. .207 T. per man per day.
from T. 31 to 50 ...	23	3.86 „ .259 „ „
„ 51 „ 75 ...	7	3.54 „ .282 „ „
	48	

10th February, 1916.

H. ROBERT,  
Statistician.

#### ANNEXURE VI.

#### REPORT OF THE

### EXPERIMENTAL STATIONS DIVISION

FOR THE YEAR 1915.

(AGRICULTURAL INSTRUCTOR).

From March to September considerable time was spent in becoming acquainted with the agricultural conditions, methods of cultivation and crops grown in the various districts, more especially as related to the small-planter community. The supervision of the three Demonstration Plots which had been established before my arrival was undertaken and inspection of lands attached to Elementary Schools was made with a view to pioneer school gardens being established in convenient centres throughout the Island.

#### *Demonstration Plots.*

The Demonstration Plots are small areas of land, situated amongst settlements of small planters, and cultivated under the supervision of the Department, with the object of inducing, by means of practical demonstration, the adoption of better methods of cultivation by the surrounding people.

Each plot established up to the present time is worked in connection with the Co-operative Credit Society of the district and a member of the Managing Committee of the Society concerned volunteers to more or less undertake the responsibility for obtaining the required labour and to personally supervise the work.

As stated in the previous year's report of this Department, two Demonstration Plots were established in 1914 at Triolet and Petit Raffray respectively and operations were commenced on a third at Long Mountain. During December of this year, land for two other plots was selected, the one at Bon Accueil (Flacq), the other at Grand Bois (Savanne) and work commenced upon them.

*Triolet*—In common with all of the cane cultivations in this district, those planted in the Demonstration Plot suffered severely from drought. During the December rains, however, some replanting was done under more hopeful conditions than had previously been obtained.

A further  $\frac{1}{2}$  arpent was added to the original plot for the purpose of growing other crops than canes, and the better varieties of manioc and sweet potatoes were planted therein.

*Petit Raffray*—The plot yielded  $13\frac{1}{2}$  tons of canes. This was not a very large return, but was far above that obtained by the surrounding small planters.

A further half arpent has been leased and planted with manioc.

*Long Mountain*—Notwithstanding that a sufficient quantity of 'fumier' could not be obtained at the proper time, the canes are in very fair condition. Manioc and ground-nuts are also being grown.

*Bon Accueil (Flacq)*—One arpent has been planted in canes No. DK 74, 89 and 131. These have commenced growing satisfactorily.

*Grand Bois*—An arpent of land has been chosen near the Roman Catholic Church and the plot is being cleared for planting early in 1916.

### *School Gardens.*

Seventeen schools were visited. The most suitable sites for the gardens were selected and suggestions made for laying out the gardens and the crops to be grown. The schools in the order in which they were inspected were as follows:—Crève Cœur, Roche Bois, Terre Rouge, Calebasses, Pamplémousses, Plaines des Papayes, Grand Baie, Arsenal Road, Rivière des Anguilles, Souillac, Ruisseau Rose, Rose Hill, Moka, Bambous, Beau Bois, Congomah and Camp Fouquereaux.

### *Field Demonstrations.*

Demonstrations in the spraying of potatoes with Bordeaux mixture against leaf disease caused by the fungus, *Phytophthora infestans*, were made at Cressonville during the month of September.

Two spraying outfits were lent by the Department for this work which was performed by the growers themselves under the immediate supervision of an officer of the Department.

Owing to indifference of some growers, at the beginning, spraying was rendered more difficult than it would otherwise have been, had a general desire existed to give the measures advocated a fair trial. The potatoes sprayed regularly were surrounded by badly diseased areas. This resulted in re-infection and necessitated more frequent, and consequently a greater number, of sprayings than would have sufficed if all the potatoes in the vicinity had been treated. Even under these adverse conditions, in cases where individuals persevered with the spraying, and provided the disease had not previously become firmly established, the results were eminently satisfactory: so much so that those who, at the commencement, were unwilling to give their time to spraying on the fungicide, afterwards expressed themselves satisfied as to its efficacy. The yield from regularly sprayed plots was more than double in weight and the tubers were of good size and quality. Plans have been made for further demonstration sprayings to be made during the next season.

### *Instruction.*

This was confined to practical demonstration in connection with Demonstration Plots, and instruction regarding general methods of cultivation and manuring whenever opportunity offered.

### *Inspection of Co-operative Credit Societies.*

I was appointed Inspector of Co-operative Credit Societies, in conjunction with my other duties, on October 16th. During December, I visited and audited the books of each Society. In most cases these were regularly kept and in fair order.

FRANK BIRKINSHAW,

31st January, 1916.

Agricultural Instructor.

### REPORT OF THE CHIEF OVERSEER.

#### REVIEW OF EXPERIMENTAL WORK AT ALL STATIONS.

The economic section of Pamplémousses Experiment Station has been enlarged and improved during the year. Varietal experiments with canes, rice, maize, manioc, ground-nuts, yams, sweet potatoes, soy beans, cowpeas, and tobacco were undertaken during the year, while the section occupied with mangos, coffee and fibres has been increased.



The following recently introduced varieties of sugar-canes were planted during the year :—

Red Mauritius, Sealy's seedling, Yellow Caledonia, Mauritius Guingham, Black Cheribon, Badilla, ( Fiji ), White Transparent, D 109, D 117, D 95, B 306, B 3,922, B 4,596, B 6,308, B 6,450.

Cane seedlings to the number of 1,684 were raised and planted out during the year and 278 of the 1914 series were selected for further propagation.

At Curepipe Station the plantations of pine-apples, tea and camphor received attention. These are now well established and growing well. A collection of 12 varieties of bananas was planted out during the year. The planting out of the Botanical Educational Section has been completed and all plants labelled. The model School Garden has also been kept in good order throughout the year.

At Le Réduit Grounds, the old French Garden was the object of much work. The artificial lakes were all filled in, so as to prevent the breeding of mosquitos, and then planted with " herbe bourrique " (*Stenotaphrum complanatum*). All drains in the vicinity of Government House were regulated and paved.

At the Central Experimental Station, Réduit, varietal and manurial tests with sugar-cane were continued, and varietal trials with maize, pistache, manioc and coffee, undertaken. The laying out of pastures for stock has been continued and trials made with alfalfas, mangolds, swedes, and various fodder grasses.

### EXPERIMENTAL PLOTS UPON ESTATES.

The supervision was undertaken of the application of manures to and the reaping of the crops of the manurial experiments carried out on the following estates :—Beau Champ, Belle Rive, Alma, Sans Souci, Bagatelle, Britannia, Mon Désert (C), Riche-en-Eau and Terracine. The yields of all these plots have been carefully recorded and presented to the Board of Agriculture.

At Plaisance Estate, a further plot of about  $4\frac{1}{2}$  arpents was laid out and planted with White Tanna, 55 P. and 131 P. canes. Manures were applied on July 26th.

Varietal tests of sugar-cane were laid out on  $\frac{1}{2}$  arpent at St. Aubin Estate. 18 recently introduced varieties and 80 of the best of the local seedlings were planted. Control rows of standard varieties were also added.

At Frederica, Bel Ombre Estate, about four acres of land have been laid out for the experimental trial of the following varieties of coffee :—

*Coffea robusta* ; *C. stenophylla*, *C. abeocuta*, *C. excelsa*, *C. Uganda*, *C. de Weevrii*, *C. Quillon* and *C. Liberica*.

### CENTRAL EXPERIMENT STATION, RÉDUIT.

The expenditure and receipts of this station have been as follows :—

<i>Expenditure.</i>					
Wages of Labourers, Mason, &c. ... ..	Rs.	6,073.00			
Purchase of Fertilisers ... ..		307.00			
"    "    Seeds ... ..		15.30			
"    "    Orpington Fowls ... ..		78.00			
"    "    Two ploughs ... ..		90.00			
"    "    1 Chaff cutter ... ..		114.98			
"    "    Food for animals ... ..		1,126.44			
Erection of Shed for Meteorological Instruments... ..		35.00			
"    "    Stone Wall in Cattle Pasture ... ..		500.00			
"    "    Manure Shed and Pits ... ..		430.00			
Houses and Fences for stock ... ..		370.63			
Cane cartage ... ..		179.58			
Miscellaneous ... ..		494.06			
Total ...		Rs.	9,813.99		
<i>Receipts.</i>					
Sale of Canes (66 o/o on extraction), Received on Account	Rs.	1,910.00			
"    "    Fowls ... ..		508.00			
"    "    Eggs ... ..		540.75			
"    "    Seeds and Plants ... ..		66.81			
"    "    1 Madagascar Bull ... ..		300.00			
Total ...		Rs.	3,325.56		

*Sugar-Cane.*

The climatic conditions were most unfavourable at this Station during the year. The sugar-cane crop was reduced from an average of 300 tons to 189.7 tons. Satisfactory yields were obtained in virgins under irrigation, the results being as follows :—

Virgins planted : December, 1913.	Cut : September, 1915.	
<i>Av. yield of 8 non-irrigated plots.</i>	<i>Av. yield of irrigated plots.</i>	
Tons p. arp.	8 plots watered once weekly. Tons p. arp.	4 plots watered twice weekly. Tons p. arp.
31.69	46.14	49.33

The most satisfactory returns on this Station were obtained with Perromat 55 and DK 74. There are also a few of the newer seedlings that show signs of promise and, as in previous years, tops of these varieties were distributed to estates for extension and trial.

The cane crop was crushed by Mon Désert (St. P.) factory, 66 o/o of the extraction in all sugars having been obtained.

The following varieties of canes were introduced during the year :—

<i>Variety.</i>	<i>Origin.</i>	<i>Remarks.</i>
R. P. 1 ... ..	Providence Plantation, (British	
" 6 ... ..	Guiana)	.....
" 8 ... ..	" ... ..	.....
" 16 ... ..	" ... ..	.....
" 21 ... ..	" ... ..	dead.
" 23 ... ..	" ... ..	.....
" 42 ... ..	" ... ..	dead.
" 73 ... ..	" ... ..	.....
I. D. ... ..	" ... ..	.....
I. P. G. ... ..	" ... ..	.....
Diamond 399 ... ..	" ... ..	dead.
Vellai ... ..	Coimbatore, South India	.....
Karim ... ..	" ... ..	dead.
Chittan ... ..	" ... ..	"
Kaludar Boothan ... ..	" ... ..	"
Bellouguet ... ..	Seychelles	.....
Branchue ... ..	" ... ..	.....
Bambou rayée ... ..	" ... ..	.....
Louzier ... ..	" ... ..	.....
Canne rouge ... ..	" ... ..	.....
N. G. 24 A. ... ..	Queensland	dead.
" 24 B. ... ..	" ... ..	"
" 40 ... ..	" ... ..	"
Q. 813 ... ..	" ... ..	"
" 135 ... ..	" ... ..	"
" 970 ... ..	" ... ..	"
H. Q. 426 ... ..	" ... ..	"



*Distribution of New Varieties.*

The following recently introduced varieties were distributed to 18 estates for trial under estate conditions :—

<i>Variety.</i>	<i>Origin.</i>	<i>Remarks.</i>
Striped Cheribon ...	Java ...	.....
Red Mauritius ...	Behar, India ...	A promising cane.
Sealy's seedling ...	Antigua, W. I. ...	The most promising of recent introductions. Is a good drought resister.
Rose Bambous ...	Formosa... ..	.....
Yellow Caledonia ...	" ... ..	Resembles White Tanna, but does not appear to be identical.
Badilla ...	Fiji ... ..	.....
White Transparent ...	Antigua, W. I. ...	Similar to Rose Bambou.
Sin nombre ...	Argentine Rep. ...	.....
Morada ...	Mexico ... ..	.....
Mauritius Guingham ...	Formosa... ..	Similar to Striped Singapore.
P. O. J. 36 ...	Java ... ..	.....
P. O. J. 100 ...	" ... ..	.....
" 161 ...	" ... ..	.....
" 213 ...	" ... ..	.....
" 228 ...	" ... ..	.....
" 826 ...	" ... ..	.....
T. 39 ...	Trinidad... ..	.....
T. 75 ...	" ... ..	.....
D. 95 ...	Louisiana ... ..	.....
D. 117 ...	Formosa... ..	Appears to show signs of promise.
B. 376 ...	Trinidad .. ..	.....
B. 3,922... ..	Antigua, W. I. ...	.....
B. 4,934... ..	Barbados ... ..	.....
B. 6,308... ..	" ... ..	.....
B. 6,450... ..	" ... ..	Quite fair. This cane is doing very well in Barbados.
Indian Cane ...	Australia ... ..	.....

A total of 754 seedlings were obtained from seed sowings during the year. The germination was poor owing to drought conditions. The parent canes used were as follows :— DK. 74, 55 P, 131 P and White Tanna.

Cane cuttings of selected varieties were forwarded to the following stations :—

Government Sugar Experiment Station, Daimokko, Formosa.

Sugar Experiment Stations, Bundaberg, Queensland.

Providence Estate, British Guiana.

Department of Agriculture, Manilla, Philippine Islands.

" " Uganda.

In addition to the usual plantations of manurial and varietal plots, a field of the Fiji variety of Badilla has been laid out, and experiments made to test the value of distillery wash for manurial purposes.

### Other Economics.

*Pistache*—Eleven varieties of ground-nuts were tested during the year. The following results were obtained :—  
(Plots 1/32 arpent each, rows 5 feet apart).

<i>Name.</i>	<i>Habit of Growth.</i>	<i>Average yield. per arpent. Kilos.</i>
Bunch ... ..	erect ... ..	968
Gambia ... ..	running ... ..	920
Local ... ..	" ... ..	904
Virginie ... ..	" ... ..	816
Virginie Bunch ...	erect ... ..	728
Refusque ... ..	running ... ..	664
Zuivere Lyn No. 21	running ... ..	352
Spanish ... ..	erect ... ..	328
Holle Yjikennenh ...	running ... ..	320
Spanish (new) ... ..	erect ... ..	272
Tennessee ... ..	" ... ..	214

The yields were abnormally low, owing to conditions of drought having prevailed up to the end of February.

*Maize*—Fifteen varieties were under experimental trial ; the seeds germinated well, but poor results were obtained, as the plantations suffered much from drought, hares and deer.

*Manioc*—The 23 different kinds of manioc planted in December of last year have grown well. Certain of the introduced varieties appear to be more disease-resistant than the local kinds.

*Coffee*—The old "*Coffea Liberica*" plantation was cut back to a height of 4 feet ; and the soil around their roots thoroughly forked and cultivated. An experimental plantation of the following kinds has also been made :—

<i>Coffea</i> Uganda ...	<i>C. arabica</i> No. 6 ...	<i>C. robusta</i> (ex Trinidad)
" Congoensis ...	" de Weeverii ...	" " (,, F.M.S.)
" Abeocuta 30	" <i>Stenophylla</i> ...	" " No. 124.
" " 37	" <i>stenophylla</i> (hybrid)	" " No. 78.
<i>C. excelsa</i> (Trinidad)	" <i>canephora</i> ...	" " No. 119.
<i>C. excelsa</i> (ex Java)	" <i>robusta</i> (Congo)...	

*Castor-oil*.—About  $\frac{1}{4}$  arpent of Castor-oil has been planted in order to provide leaves for the Eri silk-worms (*Attacus ricini*) which are being experimented with.

### Stock.

The three Madagascar bulls received last year were loaned to cattle breeders. The following is a statement showing records of services:—

<i>Name.</i>	<i>Estate.</i>	<i>Period of loan.</i>
Shakalav ... ..	St. Antoine ... ..	1.2.15 to 11. 5.15.
Vohemar ... ..	Tamarin ... ..	3.3.15 to 5. 7.15.
Hova ... ..	Petit Verger ... ..	28.7.15 to 31. 8.15.
Shakalav ... ..	Mon Rocher ... ..	28.5.15 to 28. 8.15.
Shakalav ... ..	Tamarin ... ..	7.10.15 to 31.12.15.
Vohemar ... ..	Wolmar ... ..	29.11.15 to 31.12.15.
Hova ... ..	Petit Verger ... ..	15.9.15 to 22.12.15.



The bull "Hova" was sold to Mr. Antoine Ulecoq for Rs. 300 on December 22nd, 1915.

In order to improve the breed of Milch cows in the Colony, a bull and a heifer of the Holstein breed were introduced from South Africa on the 8th of November. The pedigrees and show records are as follows :—

*Bull : Rivenhill Chieftain* : Born March 15th 1914. Sire : Michill No. 1179.

Dam : Agnes III No. 5390, sire of Dam : Prins Frederick No. 712.

*Heifer : Buttress of Batavia* : Born 5th March 1913. Sire : Frisco No. 308.

Dam : Queen 9th Boon No. 702. sire of Dam : Paul No. 1378.

*Show Record* : 1915 : Agric. Show, Johannesburg —Highly commended.

— " " " Bloemfontein — 1st Prize.

— " " " Pietermaritzburg— 2nd Prize.

— " " " Durban — 2nd Prize.

A female calf was born on December 4th and the bull will be ready for services shortly.

*Sheep*—Two rams (Bornu and Tubo), five ewes and three lambs were sent to Rodrigues on June 4th, 1915.

One ram (Kano) imported for Captain Brebner for Rodrigues, was delivered on March 29.

Twelve lambs (7 males and 5 females) were born during the year.

One ewe died on December 5th after lambing.

The rams were loaned to the following :—

<i>Name.</i>	<i>Estate.</i>	<i>Period of Loan.</i>
Challowa ...	Labourdonnais ...	19. 1.15 to 26. 4.15.
Rogo ...	Mon Loisir S.E. ...	27. 1.15 to 29. 5.15.
Bornu ...	Mon Désert (C)...	22. 2.15 to 9. 4.15.
Zaria ...	Palmyre ...	3. 3.15 to 30. 7.15.
Challowa ...	Mont Roches (Bl. Riv.)...	28. 5.15 to 21. 8.15.
Rogo ...	Palmyre ...	22. 9.15 to 31.12.15.
Challowa ...	Tamarin ...	29.11.15 to 31.12.15.

A straw hut of 3 rooms was put up for the cattleman and a labourer.

### *Poultry*

The six pens gave better results than last year. There is a great demand for eggs and young birds. The number of eggs laid during the year was as follows :—

	<i>Eggs.</i>	<i>Average per hen per year.</i>
White Leghorns (Australia) ...	695	139
Plymouth Rocks (South Africa) ...	636	106
Black Orpingtons (Australia)...	382	116
Buff " (England) ...	368	92
Black Minorcas (S. Africa) ...	462	92
White Wyandotte (S. Africa) ...	170	85

As the White Wyandotte gave so low a return, it was decided to sell them and to replace them by White Orpingtons.

2,163 eggs were sold at the rate of Rs. 3.00 a dozen, and 86 young birds at the rate of Rs. 7.50 per cockerel and Rs. 5 per pullet.

The poultry stock account to December 31st is as follows :—

<i>Expenditure.</i>		<i>Receipts.</i>	
	Rs. c.		Rs. c.
Value of Buildings ...	Rs. 1,075.10	Valuation of Buildings, December 31st ...	1,184.49
Erection of New Buildings	212.94	Sale of eggs ...	540.75
Value of stock ...	767.16	„ „ stock ...	508.00
Purchase of stock ...	78.00	Valuation of stock, adults ...	485.51
Upkeep of stock ...	420.98	„ „ young ...	40.00
By Profit ...	179.57	Stock sent to Rodrigues ...	25.00
Total ...	Rs. 2,733.75	Total ...	Rs. 2,733.75

Five “ Black Orpingtons ” were sent to Rodrigues on June 4th and others will be sent in 1916.

Two new fowl houses were built up in July.

### *Miscellaneous.*

The road system of the Experiment Station was greatly improved during the year and attention was given to the boundary walls. A special stone enclosure for manure was built during the year. Half of this was covered and the remainder left uncovered in order to obtain information respecting storage of manure under tropical conditions.

The rainfall for the year was 40.41 or 20 in. below normal.

C. A. O'CONNOR,

22nd February, 1916.

Chief Overseer.

## PAMPLEMOUSSES GARDENS & EXPERIMENT STATION.

### OVERSEER'S REPORT.

#### *Expenditure and Receipts.*

The following expenditure was incurred during the year :—

	Rs. c.
Salaries ...	2,160.00
Maintenance of Apprentices ...	186.98
Economics, wages ...	1,403.64
Ornamental, wages ...	5,466.38
Supplies and Miscellaneous... ..	1,356.72
Total ...	Rs. 10,573.72

The receipts were as follows :—

	Rs. c.
Canes ...	889.12
Economic plants, flowers, &c., ...	62.30
Seeds ...	3.25
Fruits ...	350.00
Total ...	Rs. 1,304.67

EXPERIMENT STATION.

*Sugar-Cane.*

The total crop of sugar amounted to 55,570 kilos which were sold to "Beau Plan Sugar Estate" at Rs. 16.00 per ton. The variety which stood out in the experiments was the Barbados seedling 3390. This and other promising varieties were, after disinfection, distributed to seven estates in the Northern district. Virgin canes suffered greatly from drought where irrigation could not be regularly carried out.

The 1913 series of seedlings gave fair results, and the best of this series, taking also into consideration their growth at Réduit, were selected for planting on the Experimental Plot, St. Aubin Estate.

The 1914 series of seedlings were regularly irrigated and the following were selected for further propagation at Réduit :—

<i>Parent.</i>				<i>No. of Canes selected.</i>
D 74 ...	...	...	...	8
D 130 ...	...	...	...	44
33 P ...	...	...	...	47
87 P ...	...	...	...	62
55 P ...	...	...	...	76
131 P ...	...	...	...	24
133 P ...	...	...	...	2
White Tanna	...	...	...	4
Striped Tanna	...	...	...	1
Fotiogo ...	...	...	...	4
				272

A small plantation of some 14 recently introduced varieties was planted in March with a view to testing these varieties under the climatic conditions prevailing at this Station.

*Pistache.*

Fourteen varieties of pistache were under experiment and gave the following results :—

<i>Variety.</i>			<i>No. of Trials.</i>	<i>Yield, Kil. per arp.</i>
Virginie ...	...	...	3	284
Virginie running	...	...	2	247
Bunch ...	...	...	6	224
Refusque	...	...	3	209
Local ...	...	...	6	193
Gambia ...	...	...	2	160
Virginie Bunch	...	...	5	127½
Spanish ...	...	...	3	112
Grant's Kaffir Bunching	...	...	3	69½
Zuivere Lyn	...	...	4	60½
Spanish New	...	...	3	51½
Holle Tjikennenh	...	...	2	50½
Tennessee	...	...	6	42
Spanish Pea Nut	...	...	2	34½

These yields were exceedingly low owing to the excessive drought which prevailed in the Pamplémousses District. Plantations of Pistache Malgache (*Voandzeia Madagascariensis*) were also made, but the results were very poor.



*Maize.*

The following were the results of the maize plantations :—

<i>Variety.</i>	<i>Yield, kil. grain (per arp.).</i>			
Planted in January :—				
Gele Menado ... ..	...	...	...	2465
Madoera ... ..	...	...	...	2148
Marlboro white ... ..	...	...	...	1999
Brazos ... ..	...	...	...	1882
Hickory King American ... ..	...	...	...	1516
Salisbury white ... ..	...	...	...	1356
Hickory King Rhodesian ... ..	...	...	...	1240
Local yellow ... ..	...	...	...	1180
Local red ... ..	...	...	...	958

Planted in February :—

Johnson County white ... ..	...	...	...	358
Jowa Silver Mine ... ..	...	...	...	315
Eureka ... ..	...	...	...	260
Chester County Mammoth ... ..	...	...	...	184
Yellow Congo ... ..	...	...	...	182

Planted in March :—

Marlboro ... ..	...	...	...	1900
Salisbury ... ..	...	...	...	1817
Hickory King Rhodesian ... ..	...	...	...	1633
„ „ American ... ..	...	...	...	1197
Brazos ... ..	...	...	...	1044
Gele Menado ... ..	...	...	...	952
Local yellow ... ..	...	...	...	847
Local red ... ..	...	...	...	239
Madoera ... ..	...	...	...	184
White maize ... ..	...	...	...	174

*Rice.*

The results of the rice experiments were as follows :—

<i>Variety.</i>	<i>Origin.</i>		<i>Yield, kil. padi (per arp.).</i>	
Rangaibe ... ..	...	Madagascar	...	1635
75 V 8 ... ..	...	British Guiana	...	1598
Mudu kiriel ... ..	...	Ceylon	...	1586
Sudu Elwi ... ..	...	„	...	1450
Mahatson ... ..	...	Madagascar	...	1391
6 V 1 ... ..	...	British Guiana	...	1320
75 V 6 ... ..	...	„	...	1288
75 V 5 ... ..	...	„	...	1267
75 ... ..	...	„	...	1185
75 V 1 ... ..	...	„	...	1096
74 V 4 ... ..	...	„	...	954
Lua Thom ... ..	...	Ceylon	...	941
6 ... ..	...	British Guiana	...	774
Kalu el ... ..	...	Ceylon	...	597
75 V 7 ... ..	...	British Guiana	...	596
Creole ... ..	...	„	...	308

*Manioc.*

The Manioc variety tests gave the following results :—

<i>Variety.</i>	<i>Quality.</i>	<i>kilos per arp.</i>
White Top ...	... bitter ...	2120
Yellow Bell...	... slightly bitter	1363
Cassava Beureum ...	... sweet ...	1344
Bunch of keys ...	... bitter ...	1287
Silver stick...	... „ ...	1268
Jackroe ...	... „ ...	1079
Brown stick ...	... „ ...	946
Blue-beard white ...	... slightly bitter	837
Bitter ...	... sweet ..	795
Helada 15 ...	... „ ...	776
Mullings ...	... „ ...	681
French ...	... bitter ...	681
White stick ...	... „ ...	644
White Greenaway ...	... sweet ...	606
Pacho 3 ...	... „ ...	530
New green ...	... bitter ...	511
Negrta 12 ...	... sweet ...	473
Bobby handsome ..	... „ ...	473
Palourd ...	... „ ...	435
Red Greenaway ...	... bitter ...	397
Blue stick ...	... „ ...	360
Rodney ...	... sweet ...	341
Blue top ...	... „ ...	322
Negrta 11 ...	... bitter ...	208
Smallings ...	... sweet ...	208
Cotton tree ...	... „ ..	189

*Sweet Potatos.*

The results of varietal tests with sweet potatoes were as follows :—

<i>Local varieties.</i>	<i>Tons per arpent.</i>
Gandia ...	9.6
Violet ...	5.8
Red ...	5.0
Raisin ...	3.6
White ...	3.4

*Imported varieties.*

Pierson ...	7.3
Joe's ...	6.6
Bermuda ...	5.7
Southern Queen ...	5.3
Iskandatain ...	4.7
Sealy ...	4.4
Jersey ...	4.1
Big Strain Jersey ...	4.0
Red Jersey ...	3.9
Pumpkin Jam ...	3.7
Georgia Jam...	3.6
Florida ...	3.1
Egyptian Bebai ...	3.1
Shangai ...	2.8
Egyptian white ...	2.3
Black Spanish ...	1.0

*Yams.*

The following were the yields of yams recently introduced :—

<i>Variety</i> (planted : 4.6.14).	<i>Holes reaped.</i>		<i>Kilo per hole.</i>
Light red... ..	24.8.15	1. ... ..	3.50
Bugle horn ... ..	7.8.15	2. ... ..	3.00
Yam fugue ... ..	2.9.15	2. ... ..	2.60
Horn ... ..	13.7.15	3. ... ..	2.08
Lisbon ... ..	8.7.15	4. ... ..	2.06
Cush-cush ... ..	31.8.15	8. ... ..	1.59
Bottle neck Lisbon	6.7.15	4. ... ..	1.42
" "	29.7.15	6. ... ..	1.42
Danish ... ..	27.8.15	3. ... ..	1.33
" "	20.8.15	3. ... ..	1.33
Cush ... ..	10.8.15	6. ... ..	1.25
Sealed top ... ..	17.8.15	6. ... ..	1.08
Crop ... ..	13.8.15	6. ... ..	.75
Oriental ... ..	19.7.15	6. ... ..	.33

*Soy Beans.*

A good collection of 10 varieties of soy beans were obtained from India in 1914 and planted out in September. The drought greatly interfered with the growth, supplies had to be frequently made and the plantation was most irregular. The plants were subsequently attacked with *Agromyza* and the yields were most unsatisfactory. The largest yield (126 kilos per arpent) was given by the Black Early type No. 2. Four varieties failed to produce seed.

*Cow peas.*

Experiments were laid out with cow peas, but drought and attacks of *Agromyza phaseoli* produced a failure of the plantation.

*Tobacco.*

The Turkish tobacco trials began well. The plants grew splendidly but eventually had to be destroyed on account of an attack of mildew in June which could not be checked without ruining the value of the tobacco.

*Permanent Economics.*

The planting of a definite section with high grade varieties of mangoes is being proceeded with. Twelve plants were put out during the year and 42 other plants prepared ready for putting out with the rains.

The Robusta Coffee plantation suffered during the drought and some replanting had to be done.

The fibre section is being prepared for replanting.

Cleanings amounting to about 6 acres were also made for planting out citrus plants.

## ORNAMENTAL SECTION, GARDENS.

A considerable amount of work was done in this section during the year. The lawns have all received special attention. They have had dried grass, stones, &c., removed from them and the mowing has been more regularly carried out since the system of payment by task was adopted.

The whole of the old nursery section has been overhauled. The nursery work has been concentrated, and arrangements made for turfing considerable areas which were formerly occupied with greatly overgrown nursery stock.

Attention has been given to the boundaries and to the front part of the gardens.

Plants in the new nursery houses received close attention and the orchid-house and fernery has been renewed.

Two kiosks were repaired during the year. The roads and canals have also been improved but it has not yet been found possible to complete all the changes necessary prior to opening up certain parts of the garden to motor and wheeled traffic. The water in the canals and lakes was very foul during the crop season and a great proportion of the fish was lost.



*Herbarium.*

The whole of the herbarium and Museum has been remodelled and housed in the upper part of Mon Plaisir House. A great improvement has resulted and the renewal of the herbarium and of the Museum can now be proceeded with.

*Buildings.*

The quarters of the Assistant Overseer were enlarged and repaired during the year and the new iron nursery sheds completed. A new iron gate was erected at the Mon Plaisir entrance to the Gardens.

*Exchange of Plants and Seeds.*

Plants and seeds were received from : Kew Gardens, Singapore, South Africa, Southern Nigeria, Java, East Africa, Madagascar, Federated Malay States and Rodrigues. Local donators to the Gardens were : Mon Désert (Carié) Estate, Mon Rocher Estate, Beau Séjour Estate, Mr. Gabriel Régnard and Mr. F. Bijoux.

Supplies of seeds were sent to : East Africa ; Agricultural and Horticultural Society of India ; Cape Town Gardens ; State Gardens, Bikaner ; Mr. G. Régnard and the Forest Department.

*Miscellaneous.*

329 Pic-nics were held during the year and there were 20,938 visitors to the Gardens. Records during the months April-June were not kept owing to change of Guardian. The visitors were generally very well-behaved. Two were prosecuted during the year for stealing fruit and two others were warned for plucking flowers.

The rainfall during the year was 25.97 in.

L. M. LECLERC,

8th February, 1916.

Overseer.

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LE RÉDUIT GROUNDS.

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*Expenditure.*

The expenditure incurred upon the maintenance of Le Réduit Grounds was as follows :—

	Rs.	c.
Salary of Overseer ... ..	...	840.00
Wages of Sirdars and Labourers ...	...	4,023.83
„ of Prison Warders ... ..	...	309.00
Seeds and Plants ... ..	...	66.35
Miscellaneous ... ..	...	319.64
		<hr/>
	Rs.	5,558.82

*General.*

In June a commencement was made of the transformation of the French Gardens after it was found that the lakes provided breeding places for mosquitos. The lakes were filled up with stones taken from the artificial rockeries and bridges. The stones were then covered with a good layer of soil and all levelled, with a gentle slope towards the ravine, ready for planting with grass during the wet season. The roads and paths in this section were also changed and it is expected that the work in the whole of this area will be completed within the next year.

A 'view' into the ravine of Rivière Profonde was opened up along the main avenue to Government House and added to the attractiveness of this drive.

It is also intended to open up another 'view' at the end of the French Garden.

During the year and in the season all the flower beds were planted with choice annuals. The ferns, orchids, geraniums and other ornamental plants in green-houses were attended to daily and repotted when required. A stock of plants in pots was kept for the verandahs and appartments of Government House, these comprising Crotons, Dracoenas, Aralias, Panax, Palms, &c. All roses were pruned, manured, watered and weeded when necessary and the collection increased by cuttings and budding.

*Canals and Roads.*

All the canals running on the grounds were kept in proper order of cleanliness. One new canal 160 feet in length was dug by the upper camp to carry surplus waters to the Cascade River.

Four different canals measuring together 1,254 feet in the neighbourhood of Government House were paved by workmen of the Public Works Department assisted by prisoners. These canals will take off all the waters from around Government House and all others have been suppressed.

The Latania Walk and several other paths were macadamised during the year. All paths were regulated during the year and their edges made up where necessary.

The kiosk at the 'Bout du Monde' and the fernery shed were repaired during the year.

*Kitchen Garden.*

The gardens were kept in proper order of cleanliness throughout the year, and vegetables supplied to Government House. Fruits of the season, both from the Garden and from the Grounds were also regularly supplied. All the sowings, planting and transplanting were successful, excepting the planting of potatoes. Trials were made with various different kinds of peas during the year with a view to ascertaining which kinds were best suited to the climatic conditions of this part of the Island. A stone fence for the enclosure of manure was erected near the Kitchen Garden.

The rainfall during the year was only 39.41 inches. Rain fell on 145 days.

A. VALASOIS,

31st January, 1916.

Overseer.

## CUREPIPE GARDENS &amp; EXPERIMENT STATION.

The expenditure at this Station was as follows :—

Salaries	...	...	...	...	Rs. 720.00
Labour expenses	...	...	...	...	1,552.88
Miscellaneous	...	...	...	...	826.43
					Rs. 3,099.31

The receipts were as follows :—

Sale of Ornamental plants	...	...	...	Rs. 111.70
„ Economic,,	...	...	...	17.42
„ Flowers	...	...	...	129.17
				Rs. 258.29

*Economic Section.*

The Camphor plantation has been attended to during the year and the trees are making very promising growth.

The tea plantation is growing well. It was pruned once during the year and all blank spaces were filled up.

A plantation of pine-apples has been made. The main plantation consists of local varieties, but additions in the shape of varieties recently introduced from the United States, West Indies and the Federated Malay States have been made.

A banana plantation was also made. The following are the varieties under trial :—

St. Jacques,	Red,	Naine,
Malgache,	Gingeli,	Acide,
Seychelles,	Tahiti,	Figue verte,
Carrée,	Chine,	Mitchell.

*Ornamental Section.*

The whole of the flower garden section and the rosery have been overhauled and completely changed. The rosery has grown well and an abundance of flowers was obtained. The flower garden was not as satisfactory as could have been hoped as planting was somewhat delayed on account of the amount of work that had to be done in preparing the land of this section. The *Helichrysums* and Sweet peas were, however, most successful and were greatly admired by visitors.

The overhauling of the permanent beds in the upper part of the gardens was continued. The azaleas have greatly improved since they were severely pruned ; the collection of *Camelias* has been increased, and the labelling of trees and shrubs has been continued.

*Roads and Buildings.*

The roads were weeded on several occasions and some new roads near the flower garden section and the Nursery opened up and macadamised.

The labourers' camp was pulled down and re-constructed to provide for three resident families.

A nursery shed was constructed, and the office was completely overhauled by the Public Works Department.

*Educational and School Garden Section.*

The educational section consisting of an area set apart for botanical classifications and of an area used as a model School Garden attracted a considerable number of visitors during the year. The classification section has been planted up and the labelling was almost completely finished during the year. The model school garden has been kept well stocked with ornamentals and economics of interest.

*Rainfall.*

The total rainfall recorded during the year was 72.17 in.

F. LECLERC,

31st January, 1916.

Overseer.



## ANNEXURE VII.

## REPORT OF THE BOARD OF AGRICULTURE FOR 1915.

The Board of Agriculture, established under Article 14 of Ordinance No. 30 of 1912, consists of :—

His Excellency the Governor, President,

The Director of Agriculture, Vice-President.

The following members were appointed under Notification No. 4 of January 9th, 1915, for the year 1915 :—

The Hon. G. Antelme.	W. P. Ebbels, Esq.,
„ J. A. Duclos,	Gustave Guimbeau, Esq.,
„ H. Leclézio, C.M.G.,	Amédée Hugnin, Esq.,
„ M. Martin,	T. W. Innes, Esq.,
E. Carcenac, Esq.,	F. N. Langlois, Esq.,
Arthur Dalais, Esq.,	Georges Mayer, Esq.,
Thomy d'Arifat, Esq.,	Gab. Régnard, Esq.,
L. H. de Froberville, Esq.,	Adrien Wiéhé, Esq.,
H. G. Ducray, Esq.,	K. Narainsamy, Esq.

Meetings of the Board of Agriculture were held on April 28th and on December 15th, 1915.

*April Meeting.*—At the April Meeting which was presided over by the Director of Agriculture, owing to the illness of His Excellency the President, the following printed reports were laid before the Board :—

- (1) Leaflet on Foodstuffs for Animals and their Valuation.
- (2) Bulletin No. 1, Scientific Series, "Absorptive Power of Mauritius Soils", by Mr. P. de Sornay, Assistant Chemist of the Department of Agriculture.

The following matters received consideration :—

- (1) Consideration of *Phythalus Smithi* infection at Pamplémousses.
- (2) Loans and Sale of Stock.

*December Meeting.*—At the December meeting presided over by His Excellency the Governor, the following reports were laid before the Board :—

- Annual Report of the Department of Agriculture, 1914.
  - Bulletin of Department of Agriculture, G. S. 4 and 5 ; Sc. S. 2.
  - Vanilla (Consolidation) Ordinance, 1915.
  - Report on Manufacture of Sugar-Cane Wax.
  - „ „ Mechanical Unloading of Canes.
  - Summary of Laboratory Investigations to June 30th, 1915.
  - Phythalus Smithi* Statement.
  - Report on Composition of Milks in the Colony.
  - Results of Camphor Investigations.
  - Results of Tuberculin Tests in Plaines Wilhems.
  - Animal Diseases (Consolidation) Ordinance, 1915, and Regulations made thereunder.
  - Loan and Sale of Stock Statement.
  - Final Statement of 1914-15 Crop.
  - Preliminary Estimate of 1915-16 Crop.
  - Review of cane varieties under cultivation in the Colony.
- The following matters received consideration :—
- Results of manurial Experiments on Sugar Estates, 1915.
  - Varietal Tests with Economic Plants, 1915.
  - Alcohol for Motor Traction—Motor Ploughs.
  - Drying and Storage of Maize.
  - Introduction of Cattle from Madagascar, for stud purposes.
  - Leaflet on Irrigation.

HENRI ROBERT,

10th February, 1916.

Secretary.

# PHYTALUS SMITHI DESTRUCTION.

Statement showing Total Number of Beetles and Larvæ destroyed at Pampleness during 1915.

Month 1915.	Mon Rocher.	Mount.	Beau Plan.	Espérance.	Small Planters.	Petite Rosalie.	Grande Rosalie.	St. André.	Souvenir.	Gardens.	Total Beetles or Larvæ.	Total Spent.*
January ...	74,110	287,290	414,282	14,885	349,350	50	...	...	77	7,690	1,147,734	Rs. c. 926.08
February ...	636,830	3,986,290	4,352,652	42,647	5,622,440	109	...	473	290	5,200	14,646,931	5,348.83
March ...	246,910	384,290	516,100	34,045	412,590	...	...	...	...	400	1,594,335	850.11
April ...	38,262	22,390	25,365	12,380	8,460	...	...	...	...	...	106,857	400.71
May ...	31,395	17,955	17,530	12,005	4,220	...	...	...	...	...	83,105	§ 496.95
June ...	+ 300	+ 277,000	...	...	...	...	...	...	...	...	+ 277,300	§ 662.08
July ...	1,820	+ 725,500	+ 379,100	...	...	...	...	...	...	...	+ 1,820	§ 845.62
August ...	...	+ 37,000	+ 2,128,800	...	+ 21,400	...	...	...	...	...	+ 2,187,200	§ 213.69
September ...	+ 3,100	+ 252,400	+ 93,100	...	...	...	...	...	...	...	+ 348,600	§ 98.45
October ...	...	.....	.....	...	...	...	...	...	...	...	.....	§ 119.25
November ...	28	45	347	578	93,710	...	...	...	...	...	334,798	498.04
December ...	7,618	31,423	143,260	58,787	6,138,369	29,755	136	2,117	9,483	17,145	23,587,364	5,788.34
	599,450	6,094,870	6,259,765	4,436,274	...	...	...	...	...	...	...	...
Total ...	1,636,423 + 3,400	10,824,553 + 1,291,900	11,729,301 + 2,601,000	4,611,601	12,629,139 + 21,400	29,914	136	2,590	9,850	30,435	41,503,942 + 3,917,700	§ 16,248.15

\* Including staff, labourers and sundries.

+ Number of larvæ captured.

§ Including expenses for larvæ.







